

Application No. 09/773,106
Preliminary Amendment dated August 8, 2006
Reply to Office Action of May 9, 2006

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.- 2. (Cancelled)

3. (Withdrawn) An image-sensing device as claimed in claim 10 , wherein:
the photosensitive element receives at a first electrode thereof a direct-current voltage;

the transistor has a first electrode, a second electrode, and a control electrode, the transistor having the first and control electrodes thereof connected to a second electrode of the photosensitive element so that electric charge output from the photosensitive element flows into the transistor, the transistor receiving at the second electrode thereof a direct-current voltage so that the transistor operates in a subthreshold region; and

the level adjuster adjusts the level of the analog signal output from the pixels by adjusting the direct-current voltage applied to the second electrode of the transistor.

4. (Withdrawn) An image-sensing device as claimed in claim 3, wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

5. (Withdrawn) An image-sensing device as claimed in claim 3, wherein the level adjuster produces the direct-current voltage applied to the second electrode of the transistor by subtracting from a predetermined voltage a voltage according to the electric signal output from a plurality of pixels.

6. (Withdrawn) An image-sensing device as claimed in claim 5, wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

Application No. 09/773,106
Preliminary Amendment dated August 8, 2006
Reply to Office Action of May 9, 2006

7. (Withdrawn) An image-sensing device as claimed in claim 5, wherein the level adjuster comprises:

an integrator circuit for integrating the voltage according to the electric signal output from the plurality of pixels; and

a subtracting circuit for subtracting from the predetermined voltage the voltage integrated by the integrator circuit,

wherein a voltage output from the subtracting circuit is fed to the second electrode of the transistor.

8. (Withdrawn) An image-sensing device as claimed in claim 7, wherein the level adjuster further comprises:

a holding circuit for holding the voltage output from the subtracting circuit; and a switch connected between the subtracting circuit and the holding circuit.

9. (Withdrawn) An image-sensing device as claimed in claim 8, wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

10. (Previously Presented) An image-sensing device comprising:

a plurality of pixels each comprising a photosensitive element that generates an electric signal proportional to an amount of incident light and a transistor that outputs an analog signal that is natural-logarithmically proportional to the amount of incident light; and

a level adjuster that adjusts a level of the analog signal output from the pixels by adjusting, according to the analog signal output from the pixels, a bias voltage fed to the transistor, wherein:

the photosensitive element receives at a second electrode thereof a direct-current voltage;

the transistor has a first electrode, a second electrode, and a control electrode, the transistor having the second electrode thereof connected to a first electrode of the photosensitive element so that electric charge output from the photosensitive

element flows into the transistor, the transistor receiving at the first and control electrodes thereof direct-current voltages individually so that the transistor operates in a subthreshold region; and

the level adjuster adjusts the level of the analog signal output from the pixels by adjusting the direct-current voltage applied to the control electrode of the transistor.

11. (Original) An image-sensing device as claimed in claim 10, wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

12. (Original) An image-sensing device as claimed in claim 10, wherein the level adjuster produces the direct-current voltage applied to the control electrode of the transistor by subtracting from a predetermined voltage a voltage according to the electric signal output from a plurality of pixels.

13. (Original) An image-sensing device as claimed in claim 12, wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

14. (Original) An image-sensing device as claimed in claim 12, wherein the level adjuster comprises:

an integrator circuit for integrating the voltage according to the electric signal output from the plurality of pixels; and

a subtracting circuit for subtracting from the predetermined voltage the voltage integrated by the integrator circuit,

wherein a voltage output from the subtracting circuit is fed to the control electrode of the transistor.

15. (Original) An image-sensing device as claimed in claim 14, wherein the level adjuster further comprises:

a holding circuit for holding the voltage output from the subtracting circuit; and
a switch connected between the subtracting circuit and the holding circuit.

16. (Original) An image-sensing device as claimed in claim 15, wherein the pixels are arranged in a matrix so as to form an area sensor as a whole.

17. (Currently Amended) An image-sensing device comprising:
an area sensor part including a plurality of pixels arranged in a matrix, each pixel comprising a photosensitive element that generates an electric signal proportional to an amount of incident light and a transistor that outputs an analog signal that is natural-logarithmically proportional to the amount of incident light; and
a level adjuster that adjusts a level of the analog signal output from the area sensor part by adjusting a bias voltage applied to the transistor so as to make the signal output higher as a whole when the incident light is intense and so as to make the signal output lower as a whole when the incident light is dim.

18. (Previously Presented) An image-sensing device as claimed in claim 17, wherein the level adjuster adjusts the level of the analog signal output from the area sensor part by using the output of the pixels.

19. (Previously Presented) An image-sensing device as claimed in claim 17, wherein the level adjuster adjusts the level of the analog signal output from the area sensor part by using an integral of the output of the pixels.

20. (Previously Presented) An image-sensing device as claimed in claim 17, wherein the level adjuster adjusts the level of the analog signal output from the area sensor part according to a brightness of a subject measured by means for measuring brightness.

21. (Previously Presented) An image-sensing device as claimed in claim 17, wherein the level adjuster holds an adjustment signal relatively constant while the area sensor is outputting an output signal corresponding to one frame.

Application No. 09/773,106
Preliminary Amendment dated August 8, 2006
Reply to Office Action of May 9, 2006

22. (Previously Presented) An image-sensing device as claimed in claim 17, wherein the level adjuster adjusts the level of the analog signal output from the area sensor part for every frame.

23. (Previously Presented) An image-sensing device as claimed in claim 17, wherein the level adjuster adjusts the level of the analog signal output from the area sensor part once for a plurality of frames.

24. (New) An image-sensing device as claimed in claim 17, wherein the bias voltage is applied to a control electrode of the transistor.